

## CHAPTER 10

### PRE-TRIP VEHICLE INSPECTION TEST

During the inspection, you must show that the vehicle is safe to drive. You will inspect the vehicle according to the seven-step inspection method outlined in Chapter 2.

**10-1. INSTRUCTIONS.** The examiner will give you an in-depth brief on the pre-trip inspection requirements before you will be allowed to begin the inspection. You will be required to do a thorough inspection on the vehicle you will be driving. The examiner will let you know that a vehicle inspection memory aid is available and may be used during the test, if desired. You will also be required to point to or touch the items you are inspecting. You must explain each part you inspect and what you are looking for.

**10-2. SCORING THE PRE-TRIP INSPECTION TEST.** The examiner will use a vehicle inspection test form and will score you based on the correct explanation you give for items inspected. You must state the key features or symptoms that show if a vehicle component is safe or unsafe. The examiner will explain to you the test results at the conclusion of the pre-trip inspection.

**10-3. WHEN INSPECTING ALL VEHICLES.** Follow the checklist below when practicing your pre-trip inspection.

a. **Engine Compartment.** Check the following items with the engine not running.

	GO	NO GO
<b>1. Leaks/Hoses--</b>		
a. Look for puddles on the ground.		
b. Look for dripping fluids on underside of engine and transmission.		
c. Inspect hoses for condition and leaks.		
<b>2. Oil level--</b>		
a. Show where dipstick is located.		
b. Check that oil level is within safe operating range. Level must not be above fill mark.		
<b>3. Coolant level--</b>		
a. Inspect reservoir sight glass, or		
b. If engine is not hot, remove radiator cap and check for visible coolant level.		
<b>4. Power steering fluid--</b>		
a. Show where the power steering fluid dipstick is located.		
b. Check for adequate power steering fluid level. Level must not be above the fill mark.		

	GO	NO GO
<b>5. Engine compartment belts--</b>		
a. Check the power steering, water pump, alternator, and air compressor belts for snugness (up to 3/4 inch play at center of belt), cracks, or frays.		
b. If any of the components are not belt driven, you must inform the examiner.		
c. Make sure components (not belt driven) are operating properly, are not damaged or leaking, and are securely mounted.		

b. **Cab Check/Engine Start.** Perform the following cab checks and start the engine.

	GO	NO GO
<b>1. Clutch/Gearshift--</b>		
a. Depress clutch (for standard transmission).		
b. Place gearshift lever in neutral (or park, for automatic transmissions).		
c. Start engine, then release clutch slowly (if standard transmission).		
<b>2. Oil pressure gauge--</b>		
a. Make sure the oil pressure gauge is working.		
b. Check that pressure gauge shows increasing or normal oil pressure or that warning light goes off.		
c. If equipped, oil temperature gauge should begin a gradual rise to the normal operating range.		
<b>3. Temperature gauge--</b>		
a. Check that temperature gauge works.		
b. Temperature should begin to climb to the normal operating range or temperature light should be off.		
<b>4. Ammeter/Voltmeter--</b>		
Check that gauges show alternator and/or generator is charging or that warning light is off.		
<b>5. Mirrors and Windshield--</b>		
a. Mirrors should be clean and adjusted properly from the inside.		
b. Windshield should be clean with no illegal stickers, no obstructions, or damage to the glass.		
<b>6. Emergency equipment--</b>		
a. Check for spare electrical fuses. If vehicle is not equipped with electric fuses, inform the examiner.		
b. Check for three red reflective triangles.		
c. Check for a properly charged and rated fire extinguisher.		

	GO	NO GO
7. Steering play--		
a. Non-power steering: Check for excess play by turning steering wheel back and forth. Play should not exceed 10 degrees (or about two inches on a 20-inch wheel).		
b. Power Steering: With engine running, check for excess play by turning the steering wheel back and forth. Play should not exceed 10 degrees (or about two inches on a 20-inch wheel).		
8. Wipers/Washers--		
a. Check that wiper arms and blades are secure, not damaged, and operate smoothly.		
b. If equipped, windshield washers must operate correctly.		
9. Lighting indicators--		
a. Test that dash indicators work when corresponding lights are turned on.		
b. Check left turn signal.		
c. Check right turn signal.		
d. Check 4-way emergency flashers.		
e. Check high beam headlight.		
10. Horns--		
Check that air horn and/or electric horn works.		
11. Heater/Defroster--		
Test that the heater and defroster work properly.		
12. Parking brake check--		
Apply parking brake only and make sure that it will hold the vehicle by shifting into a lower gear and gently pulling against the brake.		
13. Hydraulic brake check--		
a. Pump the brake pedal three times, then hold it down for five seconds. The brake pedal should not move (depress) during the five seconds.		
b. If equipped with hydraulic brake reserve (back-up) system, make sure key is in off position, depress brake pedal, and listen for sounds of the reserve system electric motor.		
c. Check that the warning buzzer or light is off.		
14. Air brake check (air brake equipped vehicles only).		
a. Improperly performed brake checks is an automatic failure of the vehicle inspection. The procedure is designed to check that safety devices operate correctly as air pressure drops from normal to low. For safety purposes, in areas where an incline exists, chock wheels during the air brake check. Use proper procedures for inspecting the air brake system.		

	GO	NO GO
b. Check air compressor cut-in and cut-out. Follow manufacturer's specification. Normally cut-in occurs about 100 psi and cut-out about 125 psi. With engine idling, step on and off the brake to reduce air tank pressure. The compressor should cut-in about 100 psi. The pressure should start to rise. Cut-out should occur about 125 psi. If the air governor does not work right, it may need repair. If malfunctioning, it may not keep enough air pressure for safe driving.		
c. With engine running, build pressure to governed cut-out (100 to 125 psi). Shut off engine, chock wheels, if necessary; release tractor protection valve and parking brake; (push in) the foot brake and hold it for one minute. After the initial air loss, check air gauges to see if the air pressure drops more than three pounds in one minute (single vehicle) or four pounds in one minute (combination vehicle).		
d. Begin fanning off the air pressure by rapidly applying and releasing the foot brake. Low air warning devices (buzzer, light, flag) should activate before air pressure drops below 60 psi.		
e. Continue to fan off the air pressure. At approximately 40 psi on a tractor trailer combination vehicle, the tractor protection valve and parking brake valve should close (pop out). On other combination vehicle types and single vehicle types, the parking brake valve should close (pop out).		
15. Safety belt--		
Check that the safety belt is securely mounted and adjusts and latches properly.		
16. Lights/Reflectors. Check that all external lights and reflective equipment are clean and functional. Lights and reflectors include:		
a. Clearance lights (red on rear, amber elsewhere).		
b. Headlights (high and low beams).		
c. Taillights.		
d. Turn signal.		
e. 4-way flashers.		
f. Brake lights.		
g. Reflectors (red on rear, amber elsewhere).		

**NOTE:** Checks of brake, turn signal, and 4-way emergency flasher functions must be done separately.

**10-4. EXTERNAL INSPECTION (BUS, TRUCK, AND TRACTOR).** Follow the checklist below when practicing this portion of your pre-trip inspection test.

	GO	NO GO
<b>1. Steering Box/Hoses--</b>		
a. Check to be sure that the steering box is securely mounted and not leaking. Look for any missing nuts, bolts, or cotter keys.		
b. Check for power steering fluid leaks or damage to power steering hoses.		
<b>2. Steering linkage--</b>		
a. See that connecting links, arms, and rods from the steering box to the wheel are not worn or cracked.		
b. Check that joints and sockets are not worn or loose and that there are no missing nuts, bolts, or cotter keys.		
<b>3. Spring/Air/Torque--</b>		
a. Look for missing, shifted, cracked, or broken leaf springs.		
b. Look for broken or distorted coil springs.		
c. If vehicle is equipped with torsion bars, torque arms or other types of suspension components. Check that they are not damaged and are mounted securely.		
d. Air ride suspension should be checked for damage and leaks.		
<b>4. Mounts--</b>		
Look for cracked or broken spring hangers, missing or damaged bushings, and broken, loose, or missing bolts. Check U-bolts or other axle mounting parts. The mounts should be checked at each point where they are secured to the vehicle frame and axle.		

**NOTE:** Perform the same suspension components inspection on every axle (power unit and trailer, if equipped).

	GO	NO GO
<b>5. Shock absorbers--</b>		
Check that shock absorbers are secure and that there are no leaks.		
<b>6. Slack adjustors--</b>		
a. Look for broken, loose, or missing parts.		
b. The angle between the push rod and adjustor arm should be about 90 degrees when brakes are released and not less than 90 degrees when brakes are applied.		
c. When pulled by hand, the brake rod should not move more than one inch (with the brakes release).		

	GO	NO GO
<b>7. Brake chambers--</b>		
Check that brake chambers are not leaking, cracked, or dented and are mounted securely.		
<b>8. Brake hoses/Lines--</b>		
Look for cracked, worn, or leaking hoses, lines, and couplings.		
<b>9. Drum brake--</b>		
a. Check for cracks, dents, or holes. Also check for loose or missing bolts.		
b. Brake linings (when visible) should not be worn dangerously thin.		
<b>10. Brake linings--</b>		
On some brake drums, there are openings where the brake linings can be seen from outside the drum. For this type drum, check that a visible amount of brake lining is showing.		

**NOTE:** Perform the same brake components inspection on every axle (power unit and trailer, if equipped).

	GO	NO GO
<b>11. Rims--</b>		
Check for damaged or bent rims. Rims cannot have welding repairs.		
<b>12. Inspect the following items on each tire--</b>		
a. Tread depth: Check for minimum tread depth (4/32 on steering axle tires, 2/32 on all other tires).		
b. Tire condition: Check that tread is evenly worn and look for cuts or other damage to tread or side-walls. Also make sure that valve caps and stems are not missing, broken, or damaged.		
c. Tire inflation: Check for proper inflation by using a tire gauge or by striking tires with a mallet or other similar device.		

**NOTE:** You will not get credit if you kick the tires to check for proper inflation.

	GO	NO GO
13. Hub oil seals/Axle seals--		
Check that hub grease seal and axle seals are not leaking and the oil level (if wheel has a sight glass).		
14. Lug nuts--		
a. Check that all lug nuts are present, free of cracks, and show no signs of looseness, such as rust trails or shiny threads.		
b. Ensure bolt holes are not cracked or distorted.		
15. Spacer--		
a. If equipped, check that spacers are not bent, damaged, or rusted through.		
b. Spacers should be evenly centered, with the dual wheels and tires evenly separated.		
16. Doors/Mirrors--		
a. Check that doors are not damaged and they open and close properly from the outside.		
b. Hinges must be secure with seals intact.		
c. Check that mirrors and mirror brackets are not damaged and are mounted securely with no loose fittings.		
17. Fuel tank--		
Check that tanks are secure, caps are tight, and that tanks or lines are not leaking.		
18. Battery/Box--		
a. Check that batteries are secure, connections are tight, and cell caps are present.		
b. Battery connections should not show signs of excessive corrosion.		
c. Battery box and cover or door must be secure.		
19. Drive shaft--		
a. Check that drive shaft is not bent or cracked.		
b. Couplings should be secure and free of foreign objects.		
20. Exhaust system--		
a. Check system for damage and signs of leaks such as rust or carbon soot.		
b. System should be connected tightly and mounted securely.		
21. Frame--		
Look for cracks, broken welds, holes, or other damage to the longitudinal frame member, crossmember, box, and floor.		
22. Splash guards--		
If equipped, check that splash guards or mudflaps are not damaged and are mounted securely.		

	GO	NO GO
<b>23. Doors/Ties/Lifts--</b>		
a. Check that doors and hinges are not damaged and that they open, close, and latch properly from the outside, if equipped.		
b. Ties, straps, chains, and binders must also be secure.		
c. If equipped with a cargo lift, look for leaking, damaged, or missing parts and explain how to check it for correct operation.		
d. Lift must be retracted and latched securely.		
<b>24. Air/Electric lines--</b>		
a. Listen for air leaks. Check that air hoses and electric lines are not cut, chafed, spliced, or worn (steel braid should not show through).		
b. Make sure air and electrical lines are not tangled, pinched, or dragging against tractor parts.		
<b>25. Catwalk--</b>		
Check that the catwalk is solid, clear of objects, and securely bolted to tractor frame.		
<b>26. Mounting bolts--</b>		
a. Look for loose or missing mounting brackets, clamps, bolts, or nuts. Both the fifth wheel and the slide mounting must be solidly attached.		
b. On other coupling systems (such as the ball hitch, pintle hook, and so on), inspect all coupling components and mounting brackets for missing or broken parts.		
<b>27. Locking jaws--</b>		
a. Look into fifth wheel gap and check that locking jaws are fully closed around the kingpin.		
b. On other types of coupling systems (such as the ball hitch, pintle hook, and so on), inspect the locking mechanism for missing or broken parts, and make sure it is locked securely. If present, safety cables or chains must be secure and free of kinks and excessive slack.		
<b>28. Platform (fifth wheel)--</b>		
Check for cracks or breaks in the platform structure which supports the fifth wheels skid plate.		
<b>29. Release arm (fifth wheel)--</b>		
If equipped, make sure the release arm is in the engaged position and the safety latch is in place.		



	GO	NO GO
<b>30. Kingpin/Apron/Gap--</b>		
a. Check that the kingpin is not bent.		
b. Make sure the visible part of the apron is not bent, cracked, or broken.		
c. Check that the trailer is laying flat on the fifth wheel skid plate (no gap).		
<b>31. Locking pins (fifth wheel)--</b>		
a. If equipped, look for loose or missing pins in the slide mechanism of the fifth wheel. If air powered, check for leaks.		
b. Make sure locking pins are fully engaged.		
c. Check to be sure that the fifth wheel is positioned so that the tractor frame clears the landing gear during turns.		

**10-5. INSPECTING SCHOOL BUSES.** Follow the checklist below when practicing for your pre-trip inspection test.

	GO	NO GO
<b>1. Emergency equipment--</b>		
In addition to checking for spare electrical fuses (if equipped), also check for three red reflective triangles and a properly charged and rated fire extinguisher. School bus drivers must also inspect the three red-burning flares (fuses) and a nine-item first aid kit.		
<b>2. Lighting indicators--</b>		
In addition to checking the lighting indicators listed in paragraph 10-3, school bus drivers must also check the alternately flashing amber and red lights and the strobe light (if equipped).		
<b>3. Lights/Reflectors--</b>		
In addition to checking the lights and reflective devices listed in paragraph 10-3, school bus drivers must also check the external strobe light, stop arm light, and alternately flashing amber and red lights (if equipped).		
<b>4. Stop arm--</b>		
If equipped, check stop arm to see that it is mounted securely to the frame of the vehicle. Also check for loose fittings and damage.		

	GO	NO GO
<b>5. Passenger entry/lift--</b>		
a. Check that entry door is not damaged, operates smoothly, and closes securely from the inside.		
b. Hand rails are secure and the step light is working, if equipped.		
c. The entry steps must be clear with the treads not loose or worn excessively.		
d. If equipped with a handicap lift, look for leaking, damaged, or missing parts, and explain how lift should be checked for correct operation. Lift must be fully retracted and latched securely.		
<b>6. Emergency exits--</b>		
a. Make sure that emergency exits are not damaged, operate smoothly, and closes securely from inside.		
b. Check that emergency exit warning devices are working.		
<b>7. Seating--</b>		
a. Look for broken seat frames and check that seat frames are firmly attached to the floor.		
b. Check that seat cushions are attached securely to the seat frames.		

**10-6. INSPECTING TRAILERS.** Follow the checklist below when practicing for your pre-trip inspection test.

	GO	NO GO
<b>1. Air/Electrical connections--</b>		
a. Check that trailer air connectors are sealed and in good condition.		
b. Make sure glad hands are locked in place and free of damage or air leaks.		
c. Make sure the trailer electrical plug is firmly seated and locked in place.		
<b>2. Header board--</b>		
a. Check that the header board is secure, free of damage, and strong enough to contain cargo.		
b. If equipped, the canvas or tarp carrier must be mounted and fastened securely.		
c. On enclosed trailers, check the front area for signs of damage such as cracks, bulges, or holes.		

	GO	NO GO
<b>3. Landing gear--</b>		
a. Check that the landing gear is fully raised, has no missing parts, crankhandle is secure, and the support frame is not damaged.		
b. If power operated, check for air or hydraulic leaks.		
<b>4. Doors/Ties/Lifts--</b>		
a. If equipped, check that doors are not damaged, and they open, close, and latch properly from the outside.		
b. Check that ties, straps, chains, and binders are secure.		
c. If equipped with a cargo lift, look for leaking, damaged or missing parts, and explain how to check it for correct operation.		
d. Lift should be fully retracted and latched securely.		
<b>5. Frame--</b>		
Look for cracks, broken welds, holes, or other damage to the frame, crossmember, box, and floor.		
<b>6. Tandem release arm/Locking pins--</b>		
If equipped, make sure the locking pins are locked in place and release arm is secured.		
<b>7. Remainder of trailer--</b>		
Please refer to paragraph 10-4 for detailed inspection procedures regarding the wheels, suspension system, brakes, doors, ties, lift, and splash guards.		

**10-7. INSPECTING COACHES AND TRANSIT BUSES.** Follow the checklist below when practicing for your pre-trip inspection test.

	GO	NO GO
<b>1. Passenger entry/lift--</b>		
a. Check that entry doors operate smoothly and close securely from the inside.		
b. Check that hand rails are secure and if equipped, that the step lights are working.		
c. Check that the entry steps are clear, with treads not loose or worn excessively.		
d. If equipped with a handicap lift, look for any leaking, damaged, or missing parts, and explain how it should be checked for correct operation.		
e. Lift should be fully retracted and latched securely.		

	GO	NO GO
<b>2. Emergency exits--</b>		
a. Make sure that emergency exits are not damaged, operate smoothly, and close securely from the inside.		
b. Check that any emergency exit warning devices are working.		
<b>3. Passenger seating--</b>		
a. Look for broken seat frames and check that seat frames are firmly attached to the floor.		
b. Check that seat cushions are attached securely to the seat frames.		
<b>4. Doors/Mirrors--</b>		
a. Check that entry/exit doors are not damaged and operate smoothly from outside. Hinges should be secure with seats intact.		
b. Make sure that the passenger exit mirrors and all external mirrors and mirror brackets are not damaged and are mounted securely with no loose fittings.		
<b>5. Level/Air leaks--</b>		
Check that vehicle is sitting level (front and rear), and if air-equipped, check for audible air leaks from the suspension system.		
<b>6. Fuel tanks--</b>		
Check that fuel tanks are secure with no leaks from tanks or lines.		
<b>7. Compartments--</b>		
Check that baggage and all exterior compartment doors are not damaged, operate properly, and latch securely.		
<b>8. Battery/Box--</b>		
a. Wherever located, see that batteries are secure, connections are tight, and cell caps are present.		
b. Battery connections should not show signs of excessive corrosion.		
c. Check to ensure that the battery box and cover or door is not damaged and is secure.		
<b>9. Remainder of the vehicle--</b>		
Please refer to paragraph 10-4 for detailed inspection procedures regarding wheels.		

**NOTE:** Remember, you must pass the pre-trip vehicle inspection before you can proceed to the basic control skills test.